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REPORT AND RECOMMENDATION

OF THE

PRESIDENT

TO THE

EXECUTIVE DIRECTORS

ON A

PROPOSED LOAN

TO THE

REPUBLIC OF KOREA

FOR A

THIRD HIGHWAY PROJECT

January 20, 1976

East Asia and Pacific Department

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Currency Unit	=	Won
Won 485	=	US\$1.00
Won 1,000	=	US\$2.06
Won 1,000,000	=	US\$2,061.86
Fiscal Year	=	January 1 - December 31

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

REPORT AND RECOMMENDATION OF THE PRESIDENT
TO THE EXECUTIVE DIRECTORS ON A PROPOSED LOAN TO
THE REPUBLIC OF KOREA FOR A THIRD HIGHWAY PROJECT

1. I submit the following report and recommendation on a proposed loan to the Republic of Korea for the equivalent of \$90.0 million to help finance a proposed third highway project. The loan would have a term of 24 years, including four years of grace, with interest at 8-1/2 percent per annum. The Saudi Fund for Development is considering providing a loan of \$35 million to cover part of the local costs (see paragraph 45).

PART I - THE ECONOMY

2. The latest Economic Report ("Current Economic Position and Prospects of the Republic of Korea") was distributed under cover of SecM75-437 dated June 9, 1975. The Country Data Sheets are attached as Annex I. An Industrial Sector Mission report is under preparation.

3. Korea's economic performance over the last decade has been outstanding. It entered the sixties with one of the lowest income levels in the world; it had little experience of participation in international trade; and it lacked natural resources. Despite these unpromising beginnings, Korea embarked on a course of export-oriented industrial growth that has led to its recognition as one of the most successful examples of development. Its rich endowment with the human capabilities for economic success, the availability of considerable entrepreneurial talent, a social environment which is conducive to rapid economic change, and a national dedication to unambiguous economic goals, all contributed to Korea's impressive performance. In the period 1964-74, the GNP growth rate averaged 10 percent a year in real terms, reaching the record level of 16.5 percent in 1973. This, together with a decline in population growth (from about 2.7 percent per year at the beginning of the period to 1.7 percent at present), caused per capita income to more than double in the period. The mainspring of economic growth has been the increase of exports of manufactures (from about \$65 million in 1964 to over \$4 billion in 1974). The ratio of exports to GNP rose rapidly from 4 percent in 1964 to 27 percent in 1974, and the manufacturing sector as a proportion of GNP increased from 12 percent to 28 percent in the same period. Agriculture, despite an annual growth rate of about 3.5 percent during the last decade, declined as a proportion of GNP (from 43 percent in 1964 to 23 percent in 1974).

4. Total real investment grew ten-fold between 1964 and 1974, and the ratio of investment to GNP rose from 13 percent to 29 percent. External resource requirements also grew rapidly, averaging about 9 percent of GNP during 1970-71, roughly the same level as in the early 1960's. The marginal

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saving rate during the last decade was 30 percent, which indicates that large capital inflows did not weaken efforts to mobilize resources domestically. However, Korea entered upon a period of rapid growth with a very low level of domestic savings and, therefore, the Government pursued a policy of relatively heavy dependence on external capital in the interest of a rapid acceleration of investment and growth. Moreover, since exports during 1964-74 were rising at an average rate of nearly 47 percent, the burden of additional external debt was not excessive, and the debt service ratio stood at around 13 percent in 1974.

5. Korea's performance in attempting to achieve a balanced distribution of the benefits of growth is also creditable. However, despite the fact that income distribution in Korea is generally more equitable than in comparable developing countries, the absolute gap in incomes between the urban and rural areas widened during the 1960's despite substantial migration to the cities, a modest reduction in the farm population, and high yields per unit of land under cultivation. Growth of labor productivity in agriculture was nevertheless considerably slower than in manufacturing. Since 1967, the Government has attempted to raise farm incomes and to provide other incentives for increasing foodgrain production through a price support system covering rice and barley. It broadened its efforts to achieve more widely and evenly distributed income growth by pursuing policies of decentralizing industry and emphasizing investment in the less developed regions. Also, in 1971, the Government initiated the Saemaeul (New Community) Movement as a nationwide self-help program, aimed at increasing productivity and incomes (especially in the rural areas where nearly half the population still lives) and at improving the quality of rural life. Partly as a result of these various measures, average rural household incomes are now nearly in line with those of average urban households.

Recent Trends

6. During the last three years the Korean economic situation has been subject to sudden and sharp changes. Beginning with the latter part of 1972, the Korean economy experienced an unprecedented boom. 1973 was an exceptional year, even by Korean standards, and set new records of growth in GNP, exports and savings. In the latter part of 1973, Korean economic aspirations were expressed in terms of official targets for the early 1980's of \$1,000 per capita GNP and \$10 billion of exports. The long-term strategy implied the continuation over the next decade of an overall rate of GNP growth of about 10 percent per annum but with reduced dependence, in relative terms, on net inflows from abroad.

7. The favorable economic developments of 1973 were interrupted by external developments in 1974. The sharp rise in the price of petroleum beginning in late 1973, the recession in Korea's principal export markets, Japan and the U.S., in 1974, and the high level of foodgrain and other import prices, combined to bring about a major change in the short-term economic position of Korea. With its heavy dependence on foreign trade, Korea was inevitably severely affected by these international developments.

8. The higher costs of energy and food imports alone placed a severe burden on the economy and the balance of payments. Korean dependence on imported fuels is not only extremely heavy but also, because it is very closely linked to essential industrial and transport uses, cannot be readily reduced. The additional cost of petroleum added almost \$800 million to the import bill in 1974 (considerably more than twice the current account deficit in 1973) and a doubling of the prices of foodgrains increased foreign exchange requirements in 1974 by more than \$300 million, despite a decline in the volume of these imports. Together, the increase in the costs of petroleum and foodgrains accounted for about 45 percent of the increase in Korea's import bill in 1974 and for 25 percent of total import payments. The cost of imported raw materials and intermediate goods also increased appreciably and compounded the balance of payments problem. The magnitude of the effects of these adverse developments can be gauged by the fact that Korea's terms of trade deteriorated by 18 percent, or about 5 percent of GNP, in 1974 compared with 1973.

9. This terms of trade loss combined with a simultaneous setback to export growth resulted in an appreciable slowdown of the economy in 1974. Real export growth, which had reached a peak of 52 percent per annum during 1972-73, was only 9 percent in 1974; this was attributable primarily to the deep recession in the U.S. and Japan. The volume of Korea's exports to Japan declined by about 6 percent during 1974 and its trade deficit with Japan widened to \$1.2 billion compared to \$0.5 billion in 1973. The volume of exports to the U.S. increased even in 1974. It is noteworthy that Korean exports to countries other than the U.S. and Japan showed a marked increase during 1974 denoting considerable initial success of the intensifying market diversification efforts. Although exports have revived somewhat in 1975, they are estimated to have increased by only 14 percent during the year as compared with an average of 36 percent during the 1970-74 period.

10. Imported inflation has also led to a very sharp upward pressure on the domestic price level. In addition to the sharply higher prices of imported petroleum and foodgrains, the average unit value of other imports increased by 45 percent during 1974. Consequently, the rate of domestic inflation accelerated; in calendar year 1974, consumer prices rose by about 26 percent and wholesale prices increased by about 45 percent. Since the middle of 1974, the rate of domestic inflation has slowed somewhat, reflecting seasonal factors, the slower increase in the prices of imported goods and the dampening effects of rising inventories of manufactured goods.

Government Policy Response

11. Until the end of 1974, the Government followed policies which were based on the premise that worldwide economic recovery would commence by early 1975. Thus, the principal objectives of policy in 1974 were to ease the adjustment to higher oil and other import prices, and to avoid the slowing of domestic investment and employment growth.

12. In general, the Government has accepted necessary price adjustments arising from higher energy and other import costs; one major exception to this general policy was its unwillingness to place on consumers the full burden of higher import costs of basic foodstuffs. Thus, although prices paid by consumers for foodgrains increased, substantial subsidies are involved in the sale of wheat and rice. Complete avoidance of subsidies at a time of growing unemployment and declining real wages in manufacturing would have been difficult. The Government is greatly concerned with the heavy burden these subsidies have placed on the budget and their reduction is a major objective of the Government.

13. Selective credit measures to assist the most distressed industries were another element in the Government's effort to cushion the impact of recession in 1974. These measures were intended to enable industry to finance stocks of specified raw materials, and to carry raw materials and finished goods inventories that had become excessive as a result of the decline in export demand. Small- and medium-sized firms which were particularly hard hit by the onset of the recession were assisted by a large credit program embracing both working capital and investment loans. These firms also benefitted from a preferential (government subsidized) interest rate of 12 percent, 3 percent below the normal bank rate on such loans. Similarly, special subsidized credit facilities were made available to the machinery industries and to finance equipment purchases by export industries. All told, such programs provided credits totalling some W 200 billion (\$495 million), equivalent to over 20 percent of the increase in total credit to the private sector in 1974. Overall monetary policy, which had been made quite tight in the first half of 1974, was significantly eased after mid-year. The increase in domestic credit in the second half of the year was more than double that in the January-June period and, over the year as a whole, domestic credit expanded by about 50 percent compared with an increase of only about 30 percent in 1973. However, owing to the contractionary influence of the external deficit, the money supply increased by only about 30 percent, compared with 40 percent in 1973.

14. In December 1974, the Government introduced a further set of special measures to offset the sluggish demand for exports and to relieve the liquidity problems of exporters. It expanded the program of export financing, undertook to purchase excess inventories of finished goods from industries particularly hard hit by the fall in export demand, and increased credits to exporters for the purchase of imported and domestic materials. On December 7, 1974, the currency was devalued by 17.5 percent to W 485 per U.S. dollar. The devaluation was not expected to increase exports appreciably because of the depressed state of Korea's overseas markets, but like some of the other measures, it was intended to improve the liquidity position of manufacturing enterprises. It should also improve the competitive position of import substitution industries which had been weakened during the year. But the devaluation has also contributed to continued inflationary pressures in 1975. Among measures taken by the Government to help the low income groups are substantial income tax relief, a 30 percent increase in salaries of Government employees and the initiation of public works projects, mainly in the urban areas, to alleviate unemployment. The rural areas appear to

have been hit less hard by the economic slowdown. The terms of trade moved further in favor of the farmers during 1974 as the support price for rice was adjusted sharply upward.

15. It was largely because of the efforts to sustain the 1973 momentum of growth that the real GNP rose in 1974 by more than 8 percent; sizeable gains were recorded in both consumption and investment. However, notwithstanding the support provided by Government, there was a sharp slowdown in industrial output, private fixed investment and export sales in the second half of 1974.

16. The impact of the adverse turn of events in 1974 was borne primarily by the balance of payments. The current account deficit widened from \$0.3 billion in 1973 to \$2.04 billion in 1974 and was somewhat smaller in 1975. The current account deficit in the first four months of 1975 alone amounted to \$1.2 billion; however, by July there were signs that import and export trends were coming into better balance. The financing of the 1974 deficit involved a very large reduction (\$738 million) in net international reserves (to \$300 million); the continued deficit meant further reduction in net international reserves during 1975. The financing of the large balance of payments deficit for 1975 required an increase in disbursements of medium- and long-term loans.

Longer-Term Prospects

17. Before the international developments of late 1973 and 1974, Korea appeared to be set on an economic course which could have led to its exceeding its long-range economic goals. However, the changes since the long-term framework was formulated in 1973 have necessitated a re-examination of both the objectives and the strategy. Although revised plans have not been completed, it appears that the target for the average annual increase in GNP will be lowered to 8 percent, and that the pattern of future growth will be somewhat different from that originally envisioned. Nevertheless, industrial development will remain an important element of the long-term strategy. Greater emphasis is also being given to increasing agricultural production and rural incomes. The preparation of the Fourth Plan (1977-81) affords an opportunity for a careful reconsideration of strategy; the Government has been extended financial assistance by the UNDP to meet the cost of consultants (and fellowships for Korean staff) to assist with the preparation of the Plan, and the Bank is acting as Executing Agency.

18. Korea will in all probability be capable of sustaining an annual growth rate of GNP of 8 percent during the next decade, provided the large external capital inflows required to meet the sizeable balance of payments deficits are available on reasonable terms. Considering that 90 percent of Korea's exports now consist of manufactured goods, that its links with the Japanese economy remain strong, that vigorous efforts are being made to

penetrate new markets (especially in Europe and the Middle East) and that some progress has already been made in diversifying the industrial structure, a long-term real growth rate of exports of at least 12 percent appears possible even if world trade in manufactures should expand at a much slower rate. However, this would represent a substantially slower export growth than in the past, and Korean plans already envisage greater emphasis on import substitution in three key areas (a) foodgrains, (b) energy and (c) machinery production, all of which will probably mean sharply higher investment costs per unit of output.

19. The Government is aware of the need for careful monetary and fiscal management in the months ahead. The ability to contain the balance of payments deficits will depend partly on the speed of the recovery of exports and partly on the Government's determination to narrow the fiscal deficit and to reduce the rate of domestic credit creation. However, substantial reduction in the current account deficit is likely to take several years unless the upturn in the U.S., Japanese and other OECD economies is very sharp in the years after 1975. Finding the means to finance the external deficits will continue to be Korea's most urgent economic challenge. The servicing of the sizeable foreign borrowing required should not pose serious difficulties for Korea given the present debt service ratio and the long-term prospects for continued export growth, provided that the proportion of debt incurred on short- and medium-terms and at high interest rates is not excessive. The debt service ratio stood at about 13 percent at the end of 1974. It is expected to rise moderately to around 17 percent by 1977 and decline to about 15 percent by 1980.

PART II - BANK GROUP OPERATIONS

20. As of November 30, 1975, Korea had received 22 Bank Loans and 8 IDA Credits, amounting in total to \$883.8 million in loans and \$107.0 million in credits (taking into account cancellations and the refinancing of one IDA Credit in a subsequent Bank loan).

21. A substantial part of the total has been for the transport sector -- \$219.7 million for railways, \$101.5 million for highways and \$80 million for ports. \$130.5 million has been lent for agriculture projects. The Korea Development Finance Corporation (KDFC) has received \$150 million, the Korea Development Bank (KDB) \$60 million and the Medium Industry Bank (MIB) \$30 million in Bank loans for relending to private industry. A program loan of \$100 million was made for the financing of urgently required imports of capital and intermediate goods. A total of \$80.3 million has been provided for three education projects; \$25.0 million for a tourism project; and \$15.0 million for a secondary cities project.

22. Excluding one project that was subsequently cancelled, IFC had, by November 30, 1975, entered into nine commitments: five in the financial sector and one each in the fields of textiles, electrical and electronic products,

synthetic fibers and tourism, totalling \$30.4 million (net of participations and cancellations). In December 1975, IFC's Board approved a tenth commitment of about \$5.5 million in loan and equity for a paper manufacturing company. Currently, IFC has under advanced consideration a zinc smelting and a tire manufacturing project; under preliminary consideration are projects in the fields of steel products, cement distribution, construction materials, bearings, electronics and development finance.

23. Korea's ambitious industrial development programs require large capital expenditures in the private sector, a situation which enhances the need for IFC presence. With the closer relationship established as a result of recent promotional efforts, we expect IFC's activities to continue expanding rapidly. IFC would seek projects that would: (i) result in foreign exchange revenues or savings; (ii) contribute to modernizing or deepening the industrial structure; and (iii) increase value added in manufacturing.

24. As of November 30, 1975, about \$470 million of the total Bank lending remained undisbursed on effective Loans and Credits; of this, \$265.5 million was committed within the last twelve months. Annex II contains a summary statement of Bank Loans, IDA Credits, and IFC Investments as of that date and Notes on the execution of ongoing projects. As indicated in the Notes, progress on project implementation is generally satisfactory.

25. The emphasis which the Government places on agriculture and rural development will be reflected in the programs for FY76 and 77. A Second Integrated Dairy Development Project was approved recently; in addition, a rural infrastructure project, a Watershed development project, the second stage of the Yong San Gang Irrigation Project and a second agricultural credit project have been appraised; the Okseo irrigation and regional development project has already been identified and is under preparation. A second agricultural products processing project is also under consideration.

26. The further development of the industrial and agricultural sectors and the anticipated growth of exports will require concurrent infrastructural development. Although the transport sector will be given relatively less emphasis than in the past, the investments required are large, and thus there is considerable support for this sector in the proposed program.

27. The share of the Bank Group in Korea's total external debt (disbursed) outstanding at the end of 1974 was about 6.0 percent, and the share of debt service was of the order of 2.4 percent at that time. These ratios are expected to increase somewhat by the end of the present decade.

PART III - THE TRANSPORT SECTOR

28. The development of the transport sector in Korea is seen most clearly when viewed in the context of the remarkable growth and structural

change experienced by the economy in recent years. Manufacturing output grew at an annual average rate of 18 percent in the 1960-73 period and the export of manufactures at an even faster rate. This rapid expansion of production and exports placed a severe strain on the transport sector, partly because relatively modest amounts were invested in the enlargement of its capacity under the First Development Plan (1962-1966).

29. During the Second Plan period (1967-71), the demand for transport facilities increased at an even faster pace than many of the other indicators of economic growth. Domestic passenger traffic (in terms of passenger kilometers) increased at the annual average rate of 11 percent and freight traffic (in ton-kilometers) at 19 percent; international traffic handled through the ports rose by 22 percent a year. The Government realised that the further growth of the dynamic private sector could be seriously impeded by bottlenecks in transport infrastructure. Accordingly, the allocation for investment in transport was raised from 17 percent of the Government's capital expenditure in the First Plan period to 27 percent for the Second Plan. During the latter period, over W 240 billion was committed for the improvement of the railways, the construction of new and maintenance of existing roads, and the expansion of port and airport capacity. The demand for transport services has continued to grow during the first four years of the Third Plan (1972-1976) in the course of which the Government intends to invest about W 490 billion (about \$1,000 million) in transport infrastructure, or just over a quarter of total governmental capital expenditure proposed in the Plan.

30. The Bank Group's association with the Government's efforts to modernize and expand the transport sector in Korea dates back to 1962 when a \$14.0 million Credit was made to help finance the First Railway Project. The railroad system, which had been rehabilitated following the Korean War, was at that time the only means for the large-scale movement of goods and passengers, since the country had a very small network of roads and few motor vehicles. The rapid economic progress of the succeeding years called for a wider range of transport services. In 1965, the Bank made a technical assistance grant for a comprehensive survey of land transportation modes, which was carried out by consultants. Their report, which was completed in late 1966, concluded that the railways could be expected to handle most of the country's freight traffic, of which a large proportion consisted of moving bulk commodities over relatively long distances, and that since the road-system was inadequate the Government should emphasize highway improvement in its development programs. It suggested that an organization to coordinate transport policy was needed. In 1968, the Association extended a \$3.5 million technical assistance Credit (Cr. S-4KO) to help finance feasibility and detailed engineering studies to improve the highway network and a study on transport coordination. A UNDP-financed port development study was initiated in 1971 with the Bank acting as the Executing Agency; the study recommended an investment plan for Korea's 17 first-class ports, which is now being implemented.

31. The Bank Group's lending operations have been directed towards assisting the program of investments which stemmed from a review of the recommendations of the various studies referred to in the previous paragraph. The Korean National Railroad (KNR) has continued to receive Bank Group support to improve and expand its services. To date, KNR has received about \$220 million in the form of loans and credits to help finance five projects. In June 1973, the Bank made an \$80 million loan to support the expansion of two ports -- Busan and Mukho. Following the studies financed from the proceeds of the technical assistance Credit (S-4KO), a Bank loan of \$54.5 million (769-KO) was made in 1971 to finance the construction of about 400 kilometers of national highways, feasibility and detailed engineering studies (covering 900 additional kilometers of priority roads), a highway maintenance study and the purchase of equipment and spare parts for a pilot highway maintenance program. The studies and maintenance program led to the formulation of the Second Highway Project for which a loan of \$47.0 million (956-KO) was approved in early 1974; it is progressing satisfactorily.

32. The Government has made efforts to improve transport coordination. Following extensive discussions between the Government and the Bank, a Transport Planning Office (TPO) was set up in 1970 under the jurisdiction of the Ministry of Transportation (MOT). Its main functions are to collect data and assist in the assessment of major investment proposals. TPO is controlled by, and reports to, a Transport Coordination Ministers Conference (TCMC) consisting of eight cabinet members whose ministries are most concerned with transport matters. TPO's work is supervised by a Transport Coordination Working Group (TCWG -- a Civil Service Committee on which the same ministries are represented). TPO encountered a series of teething troubles, especially in recruiting adequately qualified staff. Certain measures designed to increase its effectiveness were discussed during the negotiations for the Second Highway Project in November 1973 and were to have been implemented during the course of 1974. However, little progress was made largely because the Government had not reached firm conclusions about TPO's functions. The role of TPO and measures to increase its effectiveness were discussed during negotiations for the Fifth Railway Project. The Government, as a condition of effectiveness of the Loan, submitted to the Bank in July 1975 a time-phased program for the effective formulation and review of policies and investment proposals of all its agencies and ministries related to the transport sector, including the role and staffing of TPO. Further, the Government undertook to take measures within one year, including issuing appropriate decrees acceptable to the Bank, for carrying out the formulation and review of policies and investment proposals in accordance with the program. A transport sector mission, the first phase of which has been completed, will review these matters and examine the general questions of inter-modal coordination in future.

33. The development of the various transport modes in Korea has been influenced by the nature of the terrain (about two-thirds of the land is hilly); the concentration of economic activity and population around the

Seoul-Incheon and Busan areas; the location of domestic natural resources, e.g. coal, iron ore and limestone, in the north, northeast and center of the country; a long coastline with increasing industrial activity; and the economic dependence on exports of manufactured goods and imports of bulk raw materials.

Railways

34. The Government owned Korean National Railroad (KNR) at the end of 1973 operated 3,086 route-km of standard gauge, of which 529 km are double track. Electrification of some 321 km of industrial lines from Seoul to the northeast coast (carrying mostly mineral traffic) was completed in October 1975. Also about 100 km of suburban lines have been electrified which, with the subway opened in 1974, constitute the rail transit system in the Seoul area.

35. Of the rail freight traffic, over 78 percent consists of bulk commodities (38 percent coal, 15 percent cement, 7 percent petroleum products, 8 percent ore, 4 percent grain and 6 percent fertilizer). The railway is expected to retain, or increase, its share of the long distance traffic in line with its increased capacity resulting from operational improvements and additional rolling stock. Continued competition from other modes is expected for the remaining 22 percent which is general freight traffic and for passenger traffic; however, the railway is likely to retain a significant amount of such traffic. The railway is expected to continue to increase its efficiency of operation, partly resulting from Bank financed railway projects, but further tariff adjustments will also be required to effect a major improvement in its finances.

Ports and Shipping

36. Freight traffic through the ports, including both overseas and coastal shipping, increased from about 11 million tons in 1965 to 58 million tons in 1973. This sharp increase resulted in serious port capacity problems, particularly at Busan, the largest port. Port facilities are being expanded, chiefly at Busan, Incheon, and Mukho, with the help of loans from the Asian Development Bank and the Bank; a new port has been constructed at Pohang by the Government for the steel mill and related steel industries. Korea's share in merchant shipping is increasing slowly; over the last three years only about 22 percent of the country's total foreign trade tonnage has been carried by Korean vessels. The important role of coastal shipping is largely due to the country's geography, the Government's policy of developing industrial complexes at Pohang, Ulsan, Masan and other coastal sites, and the existing shortage of rail and road capacity. Until 1972 the shipbuilding industry in Korea produced ships in the range of 500 to 5,000 gross tons only. However, shipyards have recently been constructed at Ulsan which are now producing supertankers and have an annual capacity of one million gross tons. Another large shipyard is under construction on an island near Busan.

Aviation

37. Domestic passenger traffic carried by air is growing rapidly, but still amounts to only about one percent of the total. Domestic air freight traffic is negligible. Internal routes are served by the privately-owned Korean Airlines (KAL), which also operates a number of international flights. There are two international airports: Seoul, which was expanded recently, and Busan.

Highways

38. The road network in Korea consists of about 9,300 km of national highways, 10,900 km of provincial highways and roughly 24,000 km of city and county roads. The major road arteries are shown on the attached map. Only 44 percent of the national highways and 19 percent of other roads are paved, the rest of the network being either gravelled or unsurfaced. The present highway system is still inadequate to cope with the rapid growth of road transport, despite the Government's efforts since 1968 to catch up with the backlog of necessary road improvements. This reflects the under-investment in road facilities in the past. Until 1967, the amounts allocated to the highway system were inadequate even for maintenance needs. In the period 1968-70, the bulk of the funds invested in the highway network was used to finance the construction of two toll expressways (Seoul-Busan, 428 km and Seoul-Incheon, 30 km). This resulted in a shortage of funds for the improvement of road communications between many other areas of high economic activity.

39. The rapidly rising demand for road transport resulting from the quickening pace of economic development in Korea urgently requires the extensive improvement of the highway network. Passenger traffic and freight traffic on the highways represent about 74 percent and 23 percent respectively of the total for all modes. During the 1967-71 period the highways absorbed nearly all the increase in passenger traffic, which has grown at an average annual rate of 18 percent. During the same period, highway freight traffic increased at an annual average rate of 49 percent - well over twice the rate for freight carried by all modes (19 percent). Highways still continue to take all the increase in inter-city traffic. The growth rate for highway passenger traffic in 1971-75 was about 15 percent, with highway freight traffic growing at 7 percent during the same period. This was still above the average for all modes (5 percent). The share of freight traffic by road is expected to continue to increase in the long-term, but at a declining rate.

40. The Government in response to the present and anticipated needs for improving the highway system had originally planned to spend a total of W 227 billion on highways under the Third Plan (1972-76), but this has been revised to W 268 billion (\$554 million) - including about W 192 billion for national highways and W 36 billion for provincial and local roads. Because of cost increases, the target for national highways was scaled down to 500 km

from 1,000 km for new construction or major reconstruction, including realignments, and about 3,000 km from 4,000 km for paving and improvement mainly on present alignments. For provincial roads, the target is to pave and improve a total of about 3,500 km. The concept of paving and making minor improvements to existing road alignments as a considerably cheaper alternative to undertaking new construction of roads to higher standards has been a subject of discussion between the Government, its consultants and the Bank over the last few years. The Bank concurs with the Government's decision to undertake a relatively large paving program and to construct new road lengths only in cases where traffic levels and the anticipated benefits justify it.

41. The Government has become increasingly aware during recent years of the necessity to improve the maintenance of highways. For many years, financial allocations for maintenance were extremely low in relation to needs, the maintenance agencies had inadequate staff and equipment, and most roads, with the exception of expressways, were in a state of disrepair. Accordingly, as indicated in paragraph 31, funds were included to engage consultants to carry out a Highway Maintenance Study under the First Highway Project. Their plan, which was accepted by the Government, was for a new field organization to be set up to maintain the entire national highway network; the organization was initially established in a pilot province. Under the Agreement for the Second Highway Project (Loan 956-K0), the Government undertook to complete the establishment of the nation-wide highway maintenance organization in accordance with an agreed program, with equipment being financed under the Project. After some administrative delays, the Government is now pressing ahead with the establishment of the new organization under a revised implementation schedule which was proposed by the Government and accepted by the Bank. The setting up of the field sections, which include depots, workshops and other installations will be completed by March 1, 1976, and the organization is expected to be fully staffed and equipped and have completed taking over the maintenance of national highways by October 1, 1976.

42. The Loan Agreements pertaining to the two ongoing Bank-financed Highway Projects contain covenants to the effect that tolls would not be levied on roads constructed under these Projects except with the concurrence of the Bank. The Government's request that approval be granted to levy tolls on the Busan-Masan section of the Jeonju-Busan highway constructed under the First Highway Project and that the more general question of the levying of tolls on other highways be reviewed was considered by the Transport Sector Mission (first phase) which visited Korea in November 1975. The following decision was taken in the light of its findings: (a) that tolls at the rates proposed by the Government with an open barrier system (where tolls are collected at barriers on the toll road, instead of at points of access) were justified in the case of the Busan-Masan section; (b) that requests for the levying of tolls on other sections of the highways under the two ongoing Bank-financed Projects and the

proposed project should be supported by an economic evaluation prepared on the basis of agreed criteria, 1/ and (c) that the Government should develop a policy framework within which decisions regarding the future application of tolls would be taken in respect of other roads (Sections 3.09 and 3.10 of the Loan Agreement relate to (b) and (c)).

PART IV - THE PROJECT

43. A report entitled "Appraisal of a Third Highway Project" (No. 920a-KO dated January 13, 1976) is being distributed separately. A Loan and Project Summary is attached as Annex III. Negotiations were held in Washington from December 15 to 19, 1975 with a Korean delegation led by Mr. Hung Ki Kim, Economic Counsellor, Embassy of the Republic of Korea, Washington, D.C.

44. The objectives of the proposed project are to assist in improving the highway system to cope with the growing traffic by extending the network of all weather paved highways between the main centres of population by nearly 800 km (see attached map), and, through studies and engineering, prepare future projects for improving the network. Specifically, the project consists of:

- (a) construction, chiefly on new alignments, including paving, of about 195 km of four national highways, including supervision of the work by consultants;
- (b) paving and improvement, chiefly on present alignments, of nine national highways totalling about 600 km, including supervision of the work by consultants; and
- (c) feasibility studies by consultants of about 1,200 km of national and provincial roads, to be followed by detailed engineering if found justified.

Cost and Financing

45. The estimated total cost of the project is about \$220 million, including a foreign exchange component of \$90 million which will be financed by the proposed Bank loan. Detailed cost estimates are given in Annex III. The

1/ The agreed criteria shall be, inter alia: (i) the effect of tolls on generated traffic; (ii) potential traffic diversion resulting from the imposition of tolls and the reduction of access to the road caused by the toll collection requirements; (iii) investments on toll booths and equipment and additional approach lanes, interchanges and overpasses required with a toll system; and (iv) toll collection expenses.

foreign exchange component of the cost of highway construction and paving has been estimated at 45 percent on the assumption that all contracts would be won by local contractors, as was the case under the First and Second Highway Projects. The Korean Government would be responsible for financing the local cost component and would be able to do so from its budgetary resources. However, to assist in financing the local costs, the Government has requested a loan of \$35 million from the Saudi Fund for Development (SFD). A decision by the Board of SFD is expected in the near future and, if the loan is approved, the terms and conditions of the loan will be set during the negotiations between the SFD and the Korean Government. The SFD may request the Bank to play a role in the administration of their loan (as in the case of the Suez Canal Rehabilitation Project -- Loan 1064 -- in Egypt); in this event, a letter would be exchanged between the SFD and the Bank detailing the procedures that would be followed in respect of such matters as withdrawal applications and disbursements.

Execution

46. As in the case of the First and Second Highway Projects, the Korean Ministry of Construction (MOC) will be responsible for the execution of the proposed project through its Bureau of Public Roads (BPR). Consultants will assist in the supervision of the construction and paving of the highways included in the project. They will also help the BPR in carrying out feasibility and detailed engineering studies of the roughly 1,200 km of roads, some of which will be selected for construction and paving in the future.

Procurement and Disbursements

47. Contracts for highway construction and paving will be awarded on the basis of international competitive bidding among pre-qualified firms, in accordance with the Bank's Guidelines for Procurement.

48. Disbursements from the proceeds of the loan will be made over 5 years on the basis of:

- (a) 45 percent of the total cost of construction and paving.
- (b) 100 percent of the foreign exchange cost of the consultants' services.

A schedule of disbursements is included in Annex III.

Benefits and Economic Return

49. The proposed project will assist the Government's efforts to improve and modernize the road transport system. It will help to cope with

the present and planned growth of the transport demand of Korea's fast growing, export-oriented economy, and particularly with the demand for road transport which registered in recent years the highest increase in freight and passenger traffic of all modes. The project will also help to reduce the high costs of moving goods and people and provide easier access to some isolated areas with high economic development potential.

50. The four road sections for construction are scattered throughout the country but are located mostly in the immediate influence areas of fast growing cities such as Seoul, Daegu, Masan and Pohang. The Seoul (Seongman)-Icheon Highway (43 km) will provide a new access to Seoul and so help to reduce traffic congestion on roads on the south side of the city; it will also aid the planned expansion of the Seoul metropolitan area and shorten the distance (by 23 km) between Seoul and Icheon. Similarly, the Daegu-Masan highway (85 km) will help reduce congestion on the present road accesses to Daegu by adding a new access which will also act as a beltway for the west side of the city. The Pohang-Yeongdeog highway (45 km) will serve an isolated area of the east coast; the existing poor gravel road is the only access to this area. The Suncheon-Beolgyo highway (22 km) in the southeast serves an essentially agricultural area, producing rice and vegetables, and the coastal fishing villages.

51. The nine road sections to be paved under the project are located in five different provinces. Five roads are in the eastern central part of the country and two along the east coast, all oriented north-south. The two other roads are located in the southwestern region and run east-west. All nine roads are national highways but serve largely regional interests as they link towns and villages to major arteries. Their improvement will assist the development of regions which are densely populated but presently rather isolated. The areas served are essentially agricultural, although in a few areas (notably the east coast), the major activities are, fishing, forestry and tourism.

52. The economic rates of return for the roads to be constructed, (calculated over an assumed 20 years service life of the investment) vary between 21 percent and 37 percent. Insofar as the paving program is concerned, the economic rate of return ranges between 15 percent and 37 percent. The weighted average rate of return for construction is 31 percent, and for paving is 37 percent. The combined weighted average rate of return for construction and paving is 29 percent. Sensitivity tests assuming substantial increases in construction costs concurrent with a decrease in benefits, have shown that, even under the most pessimistic assumptions, the rates of return for construction and paving would justify both elements of the project.

PART V - LEGAL INSTRUMENTS AND AUTHORITY

53. The draft Loan Agreement between the Republic of Korea and the Bank, the Report of the Committee provided for in Article III, Section 4 (iii)

of the Articles of Agreement and the text of a Resolution approving the proposed loan are being distributed to the Executive Directors separately. The draft Loan Agreement follows the general pattern of loan agreements relating to highway projects.

54. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Bank.

PART VI - RECOMMENDATION

55. I recommend that the Executive Directors approve the proposed loan.

Robert S. McNamara
President

Attachments

January 20, 1976

COUNTRY DATA - KOREA

AREA
98.477

POPULATION
33.46 million (mid-1974)

SOCIAL INDICATORS

UNIT PER DATA USE (ATLAS BASIS) Δ	Korea		Reference Countries	
	1960	1970	1960	1970
DEMOGRAPHICS				
Birth rate (per thousand)	14.0 Δ	27.0 Δ	27.0 Δ	2,35.0 Δ
Crude death rate (per thousand)	11.0 Δ	8	13.0 Δ	19.4 Δ
Infant mortality rate (per thousand live births)	..	..	80-90 Δ	6.5 Δ
Life expectancy at birth (years)	56	65	59 Δ	11.7 Δ
Gross reproduction rate Δ	3.1 Δ	2.6 Δ	3.7 Δ	1.0 Δ
Population growth rate - urban	3.0 Δ	2.2 Δ	3.1 Δ	1.1 Δ
Population growth rate - urban	3.0 Δ	2.2 Δ	5	2.4 Δ
Age structure (percent)				
0-14	13	10 Δ	10 Δ	24.5 Δ
15 and over	54	57 Δ	45	7.3 Δ
Age dependency ratio Δ	0.9	0.8 Δ	0.9	0.5 Δ
Economic dependency ratio Δ	1.5	1.4	1.1	0.1 Δ
Urban population as percent of total	28 Δ	41 Δ	13 Δ	7 Δ
Family planning: No. of conceptions cumulative (thous.)	..	..	50	6.7 Δ
No. of users (k of married women)	..	..	10	..
EMPLOYMENT				
Total labor force (in thousands)	7,500	11,100 Δ	14,500 Δ	53,000 Δ
Population in agriculture	66	52 Δ	78	19.1 Δ
Percentage unemployed	9	11.1 Δ	..	1.3 Δ
INCOME DISTRIBUTION				
Per capita national income received by highest 5%	17 Δ	15 Δ	..	32 Δ
Percent of national income received by highest 20%	42 Δ	37 Δ	..	60 Δ
Percent of national income received by lowest 20%	7 Δ	10 Δ	..	3 Δ
Percent of national income received by lowest 40%	20 Δ	24 Δ	..	10 Δ
DISTRIBUTION OF LAND OWNERSHIP				
% owned by top 10% of owners	27	28	..	53
% owned by smallest 10% of owners	3	2	..	0.9
HEALTH AND NUTRITION				
Population per physician	3,000 Δ	1,870 Δ	7,250 Δ	850 Δ
Population per nursing person	..	1,360 Δ	2,960 Δ	310 Δ
Population per hospital bed	2,600 Δ	1,600 Δ	820 Δ	90 Δ
Per capita calorie supply as % of requirements Δ	85	103	105	136
Per capita protein supply, total (grams per day) Δ	13	19	17 Δ	75
Of which, animal and pulse	..	..	..	15
Dash rate 1-4 years Δ	96	94 Δ	93 Δ	131
EDUCATION				
Adjusted primary school enrollment ratio	12	12	12	18
Adjusted secondary enrollment ratio	11	15	12 Δ	12
Vocational enrollment as % of sec. school enrollment	..	92 Δ	..	55
Adult literacy rate %	..	..	..	99
ENERGY				
Average No. of persons per room (urban)	2.8	2.7	..	1.9
Percent of occupied units without piped water	88 Δ	80 Δ	..	61 Δ
Access to electricity (as % of total population)	28 Δ	80 Δ	..	11 Δ
Percent of rural population connected to electricity	12 Δ	40 Δ	..	..
CONSUMPTION				
Radio receivers per 1,000 population	32	127 Δ	81 Δ	107 Δ
Electric power consumption (kwh p.c.)	71	392 Δ	164 Δ	3,089 Δ
Newspaper consumption p.c. kg per year	1.8	3.4 Δ	1.4 Δ	15.9 Δ
Notes: Figures were either to the latest period or to the latest period available. Figures for the years 1966-69 or 1966-70 the latest years in print to 1960 and 1970.				
The Per Capita GNP estimate is at market prices for 1960 and 1970.				
Average number of daughters per woman of reproductive age.				
Age dependency ratio is for the decades ending in 1960 and 1970.				
Ratio of population under 15 and 65 and over to population of ages 15-64, for age dependency ratio and to labor force for age 15-64.				
200 reference standards represent physiological requirements for normal activity and health, taking				

* Japan has been selected as an objective country due to the similarity of the present Korean economic structure to that of Japan in the mid-fifties (with the same principle resource base, i.e., efficient, industrious, cheap labor and heavy reliance on imported raw materials). Moreover, agriculture, transport, and other sectors of the economy have similar characteristics. Korea also has, in its Long-Term Plan (1972-81), a pattern of industrial development which is not very different from the one Japan pursued with great success in the sixties.

.. not applicable	- nil or negligible	1/ Includes processed primary products.	5/ Development budget.
.. not available	-- less than half the smallest unit shown	2/ Based on merchandise and non-factor services.	6/ Residual (Economic Report)
		3/ Budget.	7/ Bunkering (manufactures)
		4/ Economic functional classification of Central Gov't.	Expenditure.

BALANCE OF PAYMENTS, EXTERNAL ASSISTANCE AND DEBT
(amounts in millions of U.S. dollars at current prices)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	Avg. Annual Growth Rate 1972-1981
EXPORTS, M.I.F.E. & SERVICES												
Merchandise (incl. FRS)	1,478	2,078	3,961	5,179	5,714	7,365	8,712	10,100	12,496	14,618	15,213	19.9
Services (incl. FRS)	2,089	2,576	4,367	7,668	7,805	9,164	10,316	11,621	13,473	15,801	17,907	15.8
Residence Abroad (L-H)	-1,007	-1,507	-408	-1,089	-1,071	-1,799	-2,152	-1,721	-1,773	-1,953	-1,786	-
Imports (incl. FRS)												
Merchandise (incl. FRS)	93	106	123	143	211	304	448	468	723	876	1,063	22.7
Other Factor Payments	29	19	26	42	38	64	19	135	180	245	245	-
Services (incl. FRS)	2	2	4	4	2	2	2	2	2	2	2	-
Residence Abroad (L-H)	171	170	189	211	200	285	310	315	310	360	380	-1.7
Balance of Current Accounts	-807	-311	-309	-313	-478	-717	-770	-724	-727	-728	-728	
Private Direct Investments												
Official Capital Grants	13	79	343	124	120	130	110	150	170	190	205	10.5
Public Multilateral												
Disbursements	81	669	775	1,171	2,078	2,558	2,619	2,468	2,845	2,860	3,085	4.8
Repayments	22	109	182	162	1,855	1,518	81	971	1,168	1,181	1,019	80.3
Net Disbursements	59	560	593	1,009	1,223	1,040	1,538	1,497	1,677	1,679	1,786	-3.2
Other Multilateral												
Disbursements	33	19	48	158	...	...	...	...	...	...	...	...
Repayments	20	39	35	135	...	...	...	...	...	...	...	...
Net Disbursements	13	-20	13	23	...	...	...	...	...	...	...	...
Capital Transactions excl. Official Grants & Multilateral												
Capital Transactions incl. FRS	180	43	290	270	78	1,890	1,771	1,676	1,607	1,529	1,786	...
Change in Net Reserves	-81	280	482	-118	...	...	...	...	...	...	...	...
GRAND TOTAL DEBT OUTSTANDING												
Official Grants & Multilateral												
Public Multilateral												
IBRD	85	73	150	85	...	...	...	...	...	...	...	...
ADB	81	66	10	69	...	...	...	...	...	...	...	...
Other Multilateral	...	...	...	...	...	...	...	...	...	...	...	...
Governments	309	504	378	388	...	...	...	...	...	...	...	...
Financial Institutions	188	81	211	370	...	...	...	...	...	...	...	...
Banks	11	1	13	52	...	...	...	...	...	...	...	...
Public Long-term Debt	135	183	86	1,072	...	...	...	...	...	...	...	...
Total Public Multilateral Debt	790	1,072	1,072	1,072	...	...	...	...	...	...	...	...
EXTERNAL DEBT												
Official Grants & Multilateral	1,072	1,072	1,072	1,072	...	...	...	...	...	...	...	...
IDA	1,072	1,072	1,072	1,072	...	...	...	...	...	...	...	...
IDA	1,072	1,072	1,072	1,072	...	...	...	...	...	...	...	...
Governments	1,550.9	1,550.9	1,550.9	1,550.9	...	...	...	...	...	...	...	...
Financial Institutions	1,550.9	1,550.9	1,550.9	1,550.9	...	...	...	...	...	...	...	...
Banks	1,550.9	1,550.9	1,550.9	1,550.9	...	...	...	...	...	...	...	...
Public Debt incl. FRS	1,550.9	1,550.9	1,550.9	1,550.9	...	...	...	...	...	...	...	...
Total Public Multilateral Debt	1,550.9	1,550.9	1,550.9	1,550.9	...	...	...	...	...	...	...	...
Other Multilateral Debt												
Short-term Debt (dib. only)	1,051.7	1,051.7	1,051.7	1,051.7	...	...	...	...	...	...	...	...

... not available
... not available separately
... but included in total
1/ IBRD (loans of maturity one year and above)
2/ EPR (excludes private, non-guaranteed loans)
3/ EPR (loans with a maturity of less than one year)

* Staff estimate
... not available
... but included in total
P Provisional

KOREA

THE STATUS OF BANK GROUP OPERATIONS IN THE REPUBLIC OF KOREA

A. Statement of Bank Loans and IDA Credits (as at November 30, 1975)

Loan or Credit Number	Year	Borrower	Purpose	US\$ Million		
				Amount (less cancellations)		
				Bank	IDA	Undisbursed
Seven loans and credits fully disbursed				153.8	39.7	
600	1969	ADC	Irrigation	45.0		4.5
151	1969	Republic of Korea	Education		14.8	1.7
669	1970	Republic of Korea	Railways	40.0		2.5
234	1971	Republic of Korea	Livestock		7.0	0.3
769	1971	Republic of Korea	Highways	54.5		1.3
283	1972	Republic of Korea	Irrigation		15.0	0.8
795	1972	ADC	Irrigation	33.0		28.8
335	1972	Republic of Korea	Agricultural Cr.		10.5	1.0
863	1972	Republic of Korea	Railways	40.0		4.8
905	1973	KDFC	Dev. Fin. Co.	40.0		3.4
906 & 394	1973	Republic of Korea	Education II	23.0	20.0	42.8
917	1973	Republic of Korea	Ports	80.0		71.3
942	1973	Republic of Korea	Seeds Production	7.0		6.5
953	1974	Republic of Korea	Tourism	25.0		22.5
956	1974	Republic of Korea	Highways II	47.0		20.0
994	1974	AFDC	Agriculture	13.0		12.8
1070	1975	Republic of Korea	Secondary Cities	15.0		14.9
1095	1975	KDB	Dev. Fin. Co.	60.0		52.5
1096	1975	Republic of Korea	Third Education	22.5		22.5
1101	1975	Republic of Korea	Fifth Railway	100.0		100.0
1145	1975	KDFC	Dev. Fin. Co.	55.0		55.0
1175*	1975	MTB	Dev. Fin. Co.	30.0		30.0
Total				883.8	107.0	499.9
of which has been repaid				18.6	.5	
Total now outstanding				865.2	106.5	
Amount sold						2.0
of which has been repaid				1.2		0.8
Total now held by Bank and IDA (prior to exchange adjustment)				864.0	106.5	
Total undisbursed				476.3	23.6	499.9

* Not yet effective

B. Statement of IFC Investments (as of November 30, 1975)

<u>Fiscal Year</u>	<u>Obligor</u>	<u>Type of Business</u>	<u>Amount in US\$ Million</u>		
			<u>Loan</u>	<u>Equity</u>	<u>Total</u>
1968	KDFC	Development Financing	-	0.7	0.7
1969	Honan Sil Co.	Textiles	1.4	0.3	1.7
1970	Atlas Paper Co.	Pulp and paper	4.5	0.5	5.0 ^{1/}
1971	Korea Invest- ment Finance Corp.	Capital Market development	-	0.7	0.7
1974	KDFC	Development Financing	-	0.4	0.4
1974	Korea Invest- ment Finance Corp.	Capital Market development	-	0.3	0.3
1975	Gold Star & Co., Ltd.	Electronic Products	16.0	1.3	17.3
1975	Korea Securities Finance Corp.	Capital market development	5.0	0.6	5.6
1975	Tong Yang Nylon Company Ltd.	Synthetic fibers	6.9	2.1	9.0
1975	Hae Un Dae Development Company Ltd.	Tourism	2.7	0.7	3.4
Total gross commitment			36.5	7.6	44.1
less cancellations, terminations, repayments and sales			<u>12.8</u>	<u>0.9</u>	<u>13.7</u>
Total commitments now held by IFC			<u>23.7</u>	<u>6.7</u>	<u>30.4</u>
Total undisbursed			<u>2.8</u>	<u>0.7</u>	<u>3.5</u>

^{1/} Cancelled at the request of the Company

PROJECTS IN EXECUTION ^{1/}Loan No. 600

Pyongtaek-Kumgang Irrigation Project; US\$45.0 million
Loan of May 23, 1969; Effective Date: May 25, 1970;
Closing Date: December 31, 1976

The Project includes irrigation for about 35,000 ha, improvement of drainage and roads, consolidation of paddy fields, benching of upland and tidal land reclamation. Construction was delayed by a reorganization of the executing agency and a delay in hiring consultants. The major project components (two sea dikes, the main distribution system and pumping plants) were largely completed by the end of 1974. Contracts for nearly all of the remaining work have been awarded. Cost considerations have led to the exclusion of about 5,000 ha of land from the project. Costs have risen from US\$90 million at appraisal to about US\$130 million largely because of the increased costs of right-of-way, engineering, administration and land consolidation. Preliminary estimates indicate increases in the price of rice will partially offset the effects of higher costs and reduced irrigable area. The economic rate of return is now estimated to be about 10 percent, compared with the appraisal estimate of 14 percent. The implementing agency (ADC) has reviewed ways of economizing on the remaining work which should lead to some marginal cost savings. About 90 percent of the Loan has been disbursed. Construction is progressing satisfactorily and is scheduled for completion by mid-1976.

Credit No. 151

First Education Project; US\$14.8 million Credit
of June 4, 1969; Effective Date: May 25, 1970;
Closing Date: September 30, 1976

This Project comprises: (a) the expansion and equipping of 27 technical, commercial and agricultural high schools, 5 post-secondary higher schools and 4 university teacher training departments; and (b) 26 man-years of technical assistance and 20 man-years of overseas fellowships to support the development of agricultural and technical education. All civil works, furniture, technical assistance and fellowships included in the Project have been completed. Equipment procurement is more than 90 percent complete and contracts have been awarded for about one third of the remaining items. Disbursement has now reached about 93 percent of the total. The total project cost is estimated to remain about 3 percent below the appraised estimate. Due to delays in final equipment procurement, the Closing Date has been extended by nine months.

^{1/} These notes are designed to inform the Executive Directors regarding the progress of projects in execution, and in particular to report any problems which are being encountered, and the action being taken to remedy them. They should be read in this sense, and with the understanding that they do not purport to present a balanced evaluation of strengths and weaknesses in project execution.

Loan No. 669 Third Railway Project; US\$40.0 million loan and
Credit No. 183 US\$15.0 million Credit of May 14, 1970; Effective
 Date: September 11, 1970; Closing Date: December 31, 1976

The bulk of the Loan and Credit was earmarked for the purchase of freight cars, diesel locomotives, and telecommunications and track maintenance equipment. Progress is generally satisfactory except for delays in the procurement of some microwave equipment which had to be re-tendered, and delivery is now expected in October 1976. The Closing Date has been extended by a year to December 31, 1976 to provide adequate time for the completion of procurement.

Credit No. 234 Integrated Dairy Beef Development Project; US\$7.0 million
 Credit of February 11, 1971; Effective Date: August 24,
 1971; Closing Date: March 31, 1977

The development of about 700 small and medium-sized dairy farms by providing long-term loans and the construction and operation of two dairy products processing plants were the principal components of the Project which also includes the provision of management and technical services. To date, about 580 farmers have participated and farm loans of about US\$4.5 million equivalent have been approved. About 4,900 head of cattle have been purchased and two dairy plants have been constructed and are in operation. The proceeds of the Credit are almost fully committed.

Loan No. 769 First Highway Project; US\$54.5 million Loan of
 June 29, 1971; Effective Date: December 7, 1971
 Closing Date: December 31, 1976

The construction of approximately 370 km of national highways between Jeonju and Busan was satisfactorily completed in December 1973, at a final cost about five percent above the appraisal estimate. Feasibility studies and detailed engineering have been completed for 1,400 km and 1,100 km of national highways, respectively. A study of road maintenance and the establishment of a pilot maintenance organization formed the basis of the creation of a country-wide Highway Maintenance Organization which is being carried out under the Second Highway Project. The Closing Date has been extended by 13 months to permit completion of procurement of highway maintenance equipment.

Loan No. 795 Yong San Gang Irrigation Project; US\$33.0 million Loan
Credit No. 283 and US\$15.0 million Credit of February 2, 1972; Effective
 Date: September 15, 1972; Closing Date: September 30, 1977

This Project aims at transforming an area with the highest drought frequency in Korea into one with reliable irrigation and crop diversification. Also, there will be increased production of high value crops such as fruits and winter vegetables. Design work is proceeding satisfactorily and the work on four dams, the main canals and land consolidation has started.

Award of all major contracts have been made, although the delay on several means that construction will begin roughly a year later than scheduled at appraisal. The delay was caused mainly by increased costs due largely to price escalation and design modification. The cost increases will be partially compensated for by benefits attributable to the enlargement of the area to be irrigated by about 1,400 ha., and ADC plans to reduce costs by constructing only canals, roads and drainage systems for contour furrow irrigation on all lands exceeding 2 percent slope. Also the Bank has begun monitoring construction costs on each of the ten major civil works contracts on a monthly basis.

Credit No. 335 Agricultural Credit Project; US\$10.5 million Credit of September 29, 1972; Effective Date: May 24, 1973; Closing Date: September 1, 1976

The Credit supports a three year lending program to small farmers to develop orchards, sericulture and mushroom production and to encourage the breeding of poultry and swine. It also finances an organizational and accounting study of the National Agricultural Cooperative Federation (NACF) and the strengthening of its training facilities. The Project is progressing satisfactorily and disbursement is proceeding on schedule.

Loan No. 863 Fourth Railway Project; US\$40.0 million Loan of November 22, 1972; Effective Date: February 26, 1973; Closing Date: December 31, 1976

The main elements of the Project are: electrification of lines in the Seoul suburban area; purchase of electric railcars and locomotives; the completion of electrification of 350 km of line running from Seoul to the northeastern part of Korea; track and bridge renewal; provision of yard facilities; acquisition of passenger and freight cars; and improvement of facilities for the maintenance and repair of motive power and rolling stock. No major problems have been encountered; nearly all of the Loan proceeds have been committed.

Loan No. 905 Fourth KDFC Project; US\$40.0 million Loan of June 13, 1973; Effective Date: September 10, 1973; Closing Date: December 31, 1977

The Project is progressing satisfactorily.

Loan No. 906 Second Education Project; US\$23.0 million Loan and Credit No. 394 US\$20.0 million Credit of June 13, 1973; Effective Date: September 10, 1973; Closing Date: December 31, 1977

The Project provides equipment for and extensions to the buildings of: 18 technical and 14 agricultural high schools; ten higher schools/junior colleges for industrial, agricultural, fishery and nursing training; colleges

of agriculture, engineering and natural sciences in nine universities and a merchant marine college; and ten junior teacher colleges and 12 colleges of education. It also includes pre-investment studies on health and management education. Implementation is about seven months behind schedule due to delays in the preparation of equipment lists (civil works, which are being financed by the Government, are slightly ahead of schedule). The Project has encountered two problems: delays in equipment procurement and lack of counterpart funds to cover cost overruns on civil works (about 75%). However, steps have been taken by the Government and the Bank to overcome these problems and therefore implementation should improve within the next six months. The Project is expected to be completed on schedule by the end of 1977. Disbursement has been somewhat slower than expected at appraisal due to the delay in the preparation of equipment lists but is expected to improve.

Loan No. 917Ports Project; US\$80 million Loan of June 27, 1973;Effective Date: September 18, 1973; Closing Date:June 30, 1979

The Project includes the provision of container and bulk cargo facilities and equipment at Busan and coal piers and handling equipment at Busan and Mukho. Work on the first three civil works contracts, amounting to about one-third of the estimated project cost, is somewhat behind schedule but is now proceeding satisfactorily. Bids received for the Mukho coal-handling equipment and for the Busan grain handling facilities were close to the revised cost estimates. Preparation and issuance of the remaining contract documents is on schedule. The estimated project cost has risen by about a third from the appraisal estimate, but the foreign exchange cost should not increase by more than 20 percent because most of the civil works are expected to be carried out by local contractors. The percentage disbursement of the Loan is being reduced appropriately. The legislation for the establishment of the Korean Port Authority has been approved by the National Assembly and the necessary action is expected to follow shortly.

Loan No. 942Seeds Project; US\$7.0 million Loan of November 16, 1973;Effective Date: April 24, 1974; Closing Date:December 31, 1978

The Project consists of: (a) the installation of five field crop seed processing and storage facilities; (b) farm machinery for seed production; (c) procurement of seasonal seed inventories through the operation of a revolving fund; (d) seed testing laboratories and equipment; (e) crop research (financed in part by USAID); (f) feasibility studies for irrigation and area development; and (g) technical assistance. The necessary legislative and administrative action for revising the Seed Law and establishing an "Office of Seed Production and Distribution" has been taken. Project implementation is proceeding satisfactorily. Preliminary estimates suggest that Project costs would be somewhat higher than envisaged at appraisal; the estimates are being reviewed.

Loan No. 953 Kyongju Tourism Project; US\$25.0 million Loan of
January 4, 1974; Effective Date: May 6, 1974;
Closing Date: December 31, 1978

The Project forms part of the first phase of the planned development of the Bomun Lake resort near Kyongju. It provides for a multi-purpose dam; an irrigation system for about 1,200 ha; improvement and expansion of the water supply and sewerage and solid waste disposal systems for the city of Kyongju and the resort area; installation of electrical supply and telecommunication facilities for the resort area; the construction and/or re-alignment of about 57 kms of roads; infrastructure including storm water drainage, environmental sanitation, community facilities, and a golf course; a school for training hotel personnel; and a feasibility study for the development of tourism on Cheju Island. Final design for almost all Project components is complete and several contracts have been awarded.

Loan No. 956 Second Highway Project; US\$47.0 million Loan of
January 25, 1974; Effective Date: April 4, 1974;
Closing Date: December 31, 1977

The Project, which forms part of the Government's 1972-76 road construction and paving program, consists of the construction (chiefly on new alignments) of about 130 kms and paving (largely on existing alignments) of approximately 635 km of national highways; feasibility studies by consultants of about 1,000 kms of national and provincial roads, followed by detailed engineering where justified; and the procurement of highway maintenance and workshop equipment for the extension of a new highway maintenance program from a pilot province to the remainder of the country. All construction and paving contracts have been awarded, and are expected to be completed in early 1976. Procurement of equipment is in progress and expected to be completed by mid-1976. The studies and engineering are expected to be completed by early 1977.

Loan No. 994 Integrated Agricultural Products Processing Project;
US\$13.0 million Loan of June 7, 1974; Effective Date:
March 19, 1975; Closing Date: June 30, 1979

The Project aims at integrating the on-farm production of commercial crops for export with efficient hygienic processing facilities using land that is presently idle or underutilized. It comprises (i) on-farm development of asparagus, oak mushrooms and mushrooms; (ii) construction of and improvements to facilities to process asparagus, oak mushrooms, mushrooms and fruits; and (iii) technical assistance including training of staff, services of consultants, etc.

Loan No. 1070 Secondary Cities Regional Project; US\$15.0 million
Loan of January 15, 1975; Effective Date: August 18,
1975; Closing Date: March 31, 1979

The principal aims of the Project are the establishment of an organizational framework for regional investment, planning and development and

to improve working and living conditions in the secondary cities of the less developed Gwangju region. The main elements of the Project are; (i) housing sites and services in the cities of Yeosu, Mogpo and Gwangju (370,384 m²); (ii) a fishery harbor complex with industrial processing zone (215,385 m²) in Yeosu; (iii) a city market in Suncheon City (33,160 m²); and (iv) access roads in Yeosu and Mogpo (6.61 km). It also provides technical assistance to strengthen regional planning and development, to improve the utilization of existing water supply systems in the four cities, to assist the management and operation of the fishery complex and to carry out feasibility studies of project proposals identified under the UNDP-financed Phase II Regional Study.

Loan No. 1095 Korea Development Bank Project; US\$60.0 million Loan of March 31, 1975; Effective Date: June 17, 1975; Closing Date: June 30, 1979

The Project provides funds to KDB which will be used to make sub-loans to finance direct imports for industrial sub-projects during the period mid-1975 to mid-1977.

Loan No. 1096 Third Education Project; US\$22.5 million Loan of March 31, 1975; Effective Date: June 6, 1975; Closing Date: June 30, 1980

The principal aims of the Project are to assist in supplying needed skills and to establish a framework for evaluating performance and improving the educational system. The Project consists of: (a) construction and equipment of a new technical high school; (b) equipment and extension of buildings for three agricultural junior colleges; (c) equipment and enlargement of buildings for a fisheries college, three fisheries high schools, and equipment for one merchant marine junior college; (d) construction and equipment of seven new vocational training institutes; and (e) financing of engineering and technical services required for the preparation of future education projects.

Loan No. 1101 Fifth Railway Project; US\$100.0 million Loan of April 10, 1975; Effective Date: July 15, 1975; Closing Date: December 31, 1978

The Project will help the Korean National Railroad (KNR) continue as a major carrier of freight and passengers by helping in: the upgrading, modernization and expansion of track, rolling stock, motive power, and other equipment; the improvement of the efficiency of operation; and its financial recovery. The main components of the Project are: an increase in station and line capacity and improvements in signalling; acquisition of rolling stock, diesel and electric locomotives, spare parts and repair facilities; track renewal and improvement; bridge strengthening; completion of electrification of 71 km of industrial lines; and other miscellaneous items.

Loan No. 1145 Fifth Korea Development Finance Corporation Project;
US\$55.0 million Loan of July 23, 1975; Effective Date:
September 5, 1975; Closing Date: June 30, 1980

The Loan will cover about half the KDFC's foreign exchange requirements through the end of 1977. It will be used to finance direct imports of machinery and equipment, and the foreign exchange component of domestically produced capital goods and of civil works.

Loan No. 1175 Medium Industry Bank (MIB) Project; US\$30 million
Loan of November 26, 1975; Closing Date: March 31,
1980.*

The project provides funds to MIB to make sub-loans to small and medium-sized manufacturing enterprises over the next two years.

* Not yet effective.

KOREA

THIRD HIGHWAY PROJECT

LOAN AND PROJECT SUMMARY

Borrower: The Republic of Korea

Amount: \$90.0 million equivalent

Terms: 24 years, including 4 years of grace

Interest: Standard

Project Description: The proposed project would consist of:

)

- (a) construction, chiefly on new alignments, including paving, of about 195 km of four national highways, including supervision of the work by consultants;
- (b) paving and improvement, chiefly on present alignments, of nine national highways totaling about 600 km, including supervision of the work by consultants; and
- (c) feasibility studies by consultants of about 1,200 km of national and provincial roads, to be followed by detailed engineering if found justified.

Estimated Cost: See attached table.

Financing Plan: The financing plan is expected to be as follows:

	<u>\$ million</u>	<u>Percentage</u>
Korean Government	130.7	59
IBRD Loan	<u>90.0</u>	<u>41</u>
	220.7	100

<u>Estimated Disbursements:</u>	<u>\$ million</u>	
<u>Bank Fiscal Year</u>	<u>Annual</u>	<u>Cumulative</u>
1976	0.2	0.2
1977	19.8	20.0
1978	40.0	60.0
1979	27.0	87.0
1980	3.0	90.0

Procurement Arrangement: Contracts for highway construction and paving will be awarded on the basis of international competitive bidding among pre-qualified firms, in accordance with the Bank's Guidelines for Procurement.

Consultants: Consultants will be engaged to (a) supervise the construction and paving components of the proposed project; (b) carry out the feasibility studies followed by detailed engineering if found justified of about 1,200 km of roads for future projects.

Rate of Return:

(a) Road construction	-	21-37 percent
(b) Road paving	-	15-37 percent

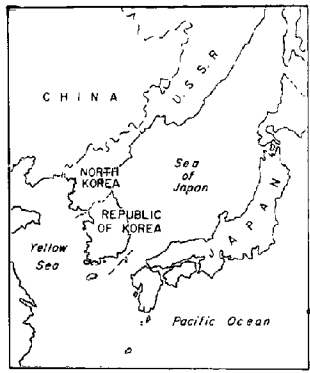
Appraisal Report No. 920a-KO, dated January 13, 1976.

Estimated Cost

<u>Project Element</u>	<u>Won (million)</u>			<u>\$ (million)</u>			<u>% Foreign Exchange Component</u>
	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	
A. Construction of four Highways	19,726	16,139	35,865	40.6	33.3	73.9	45
B. Paving of nine Highways	19,200	15,710	34,910	39.6	32.4	72.0	45
Subtotal A & B	38,926	31,849	70,775	80.2	65.7	145.9	45
C. Consulting Services:							
(a) Supervision A & B	2,716	1,164	3,880	5.6	2.4	8.0	30
(b) Feasibility Studies & Detailed Engineering	1,115	485	1,600	2.3	1.0	3.3	30
Subtotal C	3,831	1,649	5,480	7.9	3.4	11.3	30
D. Contingency Allowances:							
(a) Physical ^{a/}	4,275	3,350	7,625	8.8	6.9	15.7	
(b) Price ^{b/}	8,640	6,780	15,420	17.8	14.0	31.8	
Subtotal D	12,915	10,130	23,045	26.6	20.9	47.5	
Total Cost of Works	55,672	43,628	99,300	114.7	90.0	204.7	44
E. Right of Way	7,760	--	7,760	16.0	--	16.0	
Total Project Cost	63,432	43,628	107,060	130.7	90.0	220.7	41

^{a/} 10% on all items.

^{b/} Price escalation assumed to be at the annual rates of 12% in 1976, and 10% in 1977 and each year thereafter, for both foreign and local costs.



The boundaries shown on this map do not imply endorsement or acceptance by the World Bank and its affiliates.

